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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: HARITA *et al.*	Atty. Dkt.: 02-033
Serial No.: 09/788,428	Art Unit: 3683
Filed: 2/21/2001	Examiner: Siconolfi
Title: BEARING HOLDING STRUCTURE AND MOTOR HAVING SAME	

Assistant Commissioner for Patents

Washington, DC 20231

Date: 7 July 2003

APPEAL BRIEF UNDER 37 CFR 1.192

Sir:

In response to the Final Office Action mailed 4 November 2002 and the Advisory Action mailed on 30 January 2003 and further to the Notice of Appeal filed on 4 February, 2003, please consider the following brief, which is being filed in triplicate.

1) REAL PARTY IN INTEREST

The real party in interest is Asmo, Co., Ltd., the assignee by virtue of an assignment recorded 21 February 2001 at reel/frame 011558/0641.

2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

3) STATUS OF CLAIMS

Claims 2, 3-5, 7, 8, and 11-15 are rejected.

Claims 1, 6, 9 and 10 have been canceled.

The rejection of claims 2, 3-5, 7, 8, and 11-15 is being appealed.

4) STATUS OF AMENDMENTS

One amendment was filed, after the final rejection, on 3 January 2003. According to the subsequent Advisory Action, the amendment would be entered for purposes of appeal.

5) SUMMARY OF THE INVENTION

The invention of claim 2 is directed to a bearing holding structure, which is best shown in Figs. 2 and 3. The bearing holding structure includes a bearing 7, the outer circumferential surface of which is spherical. The bearing 7 is shown in Fig. 3 and described at page 7, lines 9-11.

The bearing holding structure includes first and second members 5, 6 having holding surfaces 5c, 6c which extend axially in opposite directions to each other and between which the bearing 7 is sandwiched. This is best shown in Fig. 2 and is described at page 7, lines 11-15.

Each of the holding surfaces 5c, 6c is tapered axially to expand straight toward the opposing holding surface as best shown in Fig. 2.

The first and second members have fixing surfaces that extend radially from the holding surfaces, respectively, and allow radial and relative movement for adjusting an axial alignment among the first and second members and the bearing, when the fixing surfaces come in contact with each other in advance for sandwiching the bearing between the holding surfaces. The fixing surfaces are unnumbered but are shown in Figs. 1-3 as the flat flange-like parts surrounding the holding surfaces 5c, 6c.

The fixing surfaces are fixed to each other to inhibit the radial and relative movement so that first and second members 5, 6 rigidly hold the bearing 7. This is shown in Fig. 1 and described at page 7, lines 16-22.

The invention of claim 3 is a bearing holding structure according to claim 2, wherein one of the fixing surfaces is provided with at least a projection 5d and another of the fixing surfaces is provided with at least an aperture 6d. This is best illustrated in Fig. 3. The projection 5d is engaged with the aperture 6d so as to be able to slightly move therein, when the fixing surfaces come in contact with each other in advance. Then, the projection 5d is deformed partly after having secured the axial alignment so that the fixing surfaces are fixed to each other, as shown in Fig. 1. This is described at page 6, line 25, to page 7, line 7, and at page 7, lines 16-22.

The invention of claim 4 is a bearing holding structure according to claim 2, wherein at least one of the holding surfaces 5c, 6c is provided with biasing means for urging the bearing 7against the opposing holding surface 5c, 6c. The biasing means is not specifically numbered but is any of the elastic holding pieces 6b shown in Fig. 2 and described at page 7, lines 23-26.

The invention of claim 5 is a bearing holding structure according to claim 4, wherein the biasing means is a plurality of elastically deformable pieces 6b formed circumferentially by cutting radially at given angular intervals and raising in one direction a part 6b of the first and second members 5, 6 corresponding to the one of the holding surfaces 5c, 6c. This is described at page 6, lines 15-18. Fig. 3 shows the deformable pieces 6b arranged at angular intervals.

The invention of claim 7 is a motor 1 including a cylinder-shaped yoke 2 having an opening 2a at an axial end thereof. The motor 1 is best shown in Fig. 1. A plurality of magnets 3 are fixed to an inner circumference of the yoke2. A rotor 4 is located in a space of the yoke on an inner side of the magnets 3. An end plate 5 is fixed to the opening 2a. The end plate 5 has an axially outwardly extending holding surface 5c. A bearing 7 is located in a center of the end plate 5 for rotatably holding the rotor 4. The remainder of claim 7 includes limitations that are essentially the same as those of claim 2, which is summarized above.

The invention of claim 8 is a motor according to claim 7 including the limitations of the projections 5d and the apertures 6d described above with respect to claim 3.

Claim 11 is directed to a method of holding a bearing 7 that is self aligning. The method includes providing a first member 5 and a second member 6 having holding surfaces 5c, 6c, which extend axially in opposite directions to each other. Each of the holding surfaces 5c, 6c is tapered axially to expand straight toward the opposing holding surface5c, 6c as discussed above with respect to claim 2.

The method further includes sandwiching the bearing 7 between the holding surfaces of the first member 5 and the second member 6. The sandwiching is shown in Fig. 2. The first member 5 and second member 6 further have fixing surfaces, which extend radially from the holding surfaces 5c, 6c, as discussed above with respect to claim 2.

The method further includes:

moving the first member 5 and the second member 6 toward each other until the fixing surfaces come in contact with each other, thereby performing the sandwiching, as shown in Fig. 2;

allowing a radial and relative movement of the first member 5 and the second member 6 for adjusting axial alignment of the first member 5 and the second member 6 and the bearing 7; and

when the fixing surfaces come in contact with each other and after the allowing of radial and relative movement of the first member 5 and the second member 6, fixing the first member 5 and the second member 6 to each other to inhibit the radial and relative movement so that first and second members 5, 6 rigidly hold the bearing 7 in alignment. This is discussed above with respect to claim 3.

Claim 12 is directed to the method of holding a bearing 7 of claim 11 and further providing one of the fixing surfaces with at least a projection 5d and another of the fixing surfaces with at least an aperture 6d. The projection 5d is engaged with the aperture 6d so as to be able to move therein when the fixing surfaces come in contact with each other, thereby providing for the adjusting of the axial alignment among the first member 5 and the second member 6 and the bearing 7. This is shown in Fig. 1 and discussed above with respect to claim 3.

Claim 13 is directed to the method of holding a bearing 7 of claim 12 and further deforming the projection 5d to secure the fixing surfaces to each other thus securing the axial alignment among the first member 5 and the second member 6 and the bearing 7. This is illustrated in Fig. 1 and described at page 7, lines 19-22.

Claim 14 is directed to the method of holding a bearing 7 of claim 11 and further providing at least one of the holding surfaces 5c, 6c with biasing means 6b for urging the bearing 7 against the opposing holding surface 5c, 6c. This is shown in Figs. 1 and 2 and is discussed above with respect to claim 4.

Claim 15 is directed to the method of holding a bearing 7 of claim 14, wherein the providing at least one of the holding surfaces 5c, 6c with biasing means 6b further includes providing the biasing means 6b as a plurality of elastically deformable pieces 6b formed circumferentially by cutting radially at given angular intervals and raising in one direction a part of the first and second members 5, 6 corresponding to the one of the holding surfaces 5c, 6c. This is illustrated in Figs. 2 and 3 and is discussed above with respect to claim 5.

6) ISSUES

Whether claims 2-5, 7, 8, and 11-15 are unpatentable under 35 USC 103 over the patent to Strobl in view of the patent to Rose.

7) GROUPING OF CLAIMS

Claims 2, 4, 5, and 7 stand or fall together.

Claims 3 and 8 stand or fall together.

Claims 11, 14 and 15 stand or fall together.

Claim 12 constitutes its own separately patentable claim group.

Claim 13 constitutes its own separately patentable claim group.

8) ARGUMENT

1. Prior Art

U.S. patent 5,360,274 to Strobl

The patent to Strobl discloses a self-aligning bearing for an electric motor. Of particular interest is Figure 1, which discloses a spherical, bearing 1. A retainer 9 retains the bearing 1. The retainer 9 has resilient fingers 10 for applying force to the bearing 1. The assembly of the device is not clearly specified, but it is clear that the retainer 9 is fitted axially into the housing 6. The drawings do not show radial clearance between the retainer 9 and the housing 6 nor is any clearance shown between the locking ring 11 and the housing. Thus the retainer 9 and the locking ring cannot move radially once fitted into the housing 9. That is, once the retainer 9 is fitted into the housing, no radial movement between the retainer 9 and the locking ring 11 is possible.

U.S. patent 3,239,287 to Rose

The patent to Rose discloses a self-aligning bearing assembly for a tape player. As best shown in Figure 2, a bearing 12 is retained by a bearing bracket 14. The bearing bracket 14 is fitted over an end of the bearing 12 and attached to a bearing plate 16 by engagement of two fingers 42 with a pair of corresponding apertures 48. Once the bearing bracket is fixed to the bearing bracket 16, radial movement of the feet 32 of the bearing bracket 14 with respect to the bearing plate is prevented by the fingers 42.

2. Errors in the Rejection

Neither of the prior art patents relied on in the rejection shows fixing surfaces that allow relative movement for adjusting axial alignment among the first and second members when the fixing surfaces come in contact with each other.

As for the group of claims 2, 4, 5, and 7, claims 2 and 7 recite the following:

> ". . . the first and second members have fixing surfaces which extend radially from the holding surfaces, respectively, and allow radial and relative movement for adjusting an axial alignment among the first and second members and the bearing, when the fixing surfaces come in contact with each other in advance for sandwiching the bearing between the holding surfaces. . . "

The fixing surfaces (unnumbered) of the present application have the projections 5d and the apertures 6d, which allow radial and relative movement for adjusting the axial alignment when the fixing members initially come into contact during assembly. As described on page 7, lines 1-7, of the specification, the inner diameter L2 of each aperture 6d is larger than the outer diameter L1 of each projection 5d, which allows the relative movement when the fixing surfaces are in contact.

The patent to Strobl fails to disclose the relative movement feature. Figure 1 of Strobl, which is cited in numbered paragraph 3 of the final office action, shows that the surface of the retainer 9 that corresponds to one of the claimed fixing surfaces is locked in place in the radial direction by the press fitting before the retainer 9 and the support ring 11 come into contact. Thus the surfaces of the Strobl device that correspond to the claimed fixing surfaces do not permit any radial and relative movement when the retainer 9 and the support ring 11 come into contact, and the patent to Strobl alone does not satisfy the claim limitations of claim 2.

Claims 2 and 7 recite that the fixing surfaces allow the radial and relative movement. The fixing surfaces are claimed as extending radially from the holding surfaces. The applicants recognize that the fingers 10 of the retainer 9 of the Strobl patent permit some degree of radial movement because they are flexible. However, the surfaces of the Strobl patent that correspond to the claimed fixing surfaces do not permit any radial and relative movement when the retainer 9 and the support ring 11 come into contact, in contrast to the claimed structure.

The Rose patent also fails to disclose the relative movement feature. The Rose patent describes the assembly process in column 3, line 59 to column 4, line 3. It is clear from the nature of the Rose device that no radial and relative movement of the feet 32, or fixing surfaces, can take place once the surfaces 32, 16, which correspond to the claimed fixing surfaces, make contact. The fixing surfaces 32, 16 of the Rose patent do not come into contact until they are fully locked by the fingers 42 due to the design of the device. Like the Strobl device, the flexibility of the holding surfaces 36 of the Rose device always permits some degree of radial movement; however, claims 2 and 7 recite that the fixing surfaces permit radial and relative movement after they come into contact, for the purpose of adjustment. The surfaces that correspond to the claimed fixing surfaces are the flat parts called feet 32 in the Rose patent and the bearing plate 16. The feet 32 do not move radially once the feet and the bearing plate 16 come into contact due to the locking nature of the fingers and the bearing plate 16. Therefore, the Rose patent cannot satisfy the claim limitations.

If it is the examiner's position that, in the combination of Strobl and Rose, the feet 32 do move radially after the fixing surfaces contact one another due to the thin flexible nature of the fingers 42, then it is the applicants' position that it would be improper to combine the Rose patent with the Strobl patent. That is, the retainer 9 of the Strobl patent is clearly not supposed to move once it is press fitted into position, and to substitute a flimsy, movable retainer would not serve the retaining purpose of the retainer 9 and would not have been obvious to one of ordinary skill in the art.

Claims 3 and 8 recite an aperture provided on one of the fixing surfaces and projection provided on the other. Claims 3 and 8 recite the following:

> ". . . wherein one of the fixing surfaces is provided with at least a projection and another of the fixing surfaces is provided with at least an aperture, the projection being engaged with the aperture so as to be able to slightly move therein, when the fixing surfaces come in contact with each other in advance, and, then, being deformed partly after having secured the axial alignment so that the fixing surfaces are fixed to each other.

Thus, the projection is claimed as being able to move within the aperture when engaged with the aperture. The final office action relies on the Rose patent for these features. Although the projections 42 of the Rose device can move slightly in the apertures 48 before the fixing surfaces 32, 16 come into contact, the projections, or fingers 42, are not intended to move in the apertures 48 after the fixing surfaces come into contact, in contrast to the claimed structure. This is clear from their angled position, which for locking the bracket 14 in place.

Also, claims 3 and 8 call for the projections to be deformed after the fixing surfaces come into contact. In the Rose device, any deformation of the fingers 42 is complete when the fixing surfaces come into contact. Therefore, even if claims 2-5 and 7 are unpatentable over the combination of Rose and Strobl, claims 3 and 8 recite additional unobvious subject matter that patentably distinguishes claims 3 and 8 from the prior art combination of Rose and Strobl. Therefore, claims 3 and 8 are believed to be separately patentable over the Strobl and Rose patents.

As for the group of claims 11, 14 and 15, claim 11 is a method claim that is similar to claims 2 and 7. Claim 11 recites allowing radial and relative movement subsequent to the recitation of moving the fixing surfaces into contact with each other. Claim 11 is a method claim and clearly recites the order of the actions of the assembly process and is thus being argued separately from claims 2 and 7. Also, in the event that the functional recitations of the rejected claims are given more weight when presented in a method claim, the applicants do not wish for claim 11 to stand or fall with the apparatus claims 2 and 7, although the language of claims 2 and 7 is similar to that of claim 11. That is, even if claims 2-5 and 7 are found to be unpatentable over the combination of Rose and Strobl, claims 11, 14 and 15 are believed by the applicants to be separately patentable and should not be grouped with claims 2-5 and 7, which are apparatus claims. The method claims were added in response to a suggestion by the examiner in a telephonic interview with a representative of the applicants, which indicates that, at one point, the examiner believed that a method claim is more likely to be patentable than the apparatus claims. This supports the separate grouping of claims 11-15 from the apparatus claims 2-5 and 7.

As mentioned above, in the Strobl patent, no radial and relative movement of the fixing surfaces is permitted once the fixing surfaces come into contact. This is also true of the Rose

device as described in detail above. Therefore, neither of the references relied on in the final office action discloses the actions recited in claim 11.

The method of claim 12 recites the provision of a projection on one of the fixing surfaces and an aperture on the other to provide for adjusting the axial alignment. Although the Rose patent discloses a projection 42 and an aperture 48, the projection 42 and aperture 48 do not provide for the claimed adjustment. Instead, the projection 42 and the aperture 48 of the Rose device prevent any adjustment after the fixing surfaces make contact and are used to fully lock the bearing plate 16 into place. Therefore, neither of the references relied on in the final office action discloses the actions recited in claim 12.

The method of claim 12 is believed to be separately patentable from the group of method claims that includes claim 11, 14 and 15 for the same reasons that claims 3 and 8 are separately patentable from the other apparatus claims. Claims 3 and 8 are argued as a separate claim group above. That is, claim 12 recites an additional unobvious operation (providing a projection and an aperture that permit adjustment) not found in the combination of Rose and Strobl, and even if claims 11, 14 and 15 are found to be unpatentable over the combination of Rose and Strobl, claim 12 should be patentable. The method of claim 12 is further separately patentable from any group of apparatus claims for the reasons given above with respect to the separate patentability of claims 11, 14 and 15.

The method of claim 13 recites the action of deforming the projection to secure the fixing surfaces to each other thus securing the axial alignment among the first member, the second member and the bearing. That is, the deformation secures the alignment that was achieved during the adjustment, which took place, as claimed, after the fixing surfaces came into contact with one another. The fingers 42 of the Rose patent deform as they are being inserted into the apertures 48; however, there is no deformation of the fingers after the fixing surfaces come into contact and after an adjustment is made. Once the fixing surfaces 32, 16 of the Rose patent come into contact, no adjustment is possible. Therefore, the deformation of the fingers in the Rose patent cannot correspond to the claimed deformation. Therefore, neither of the references relied on in the final office action discloses the actions recited in claim 13.

Claim 13 is separately patentable from claim 12 and from the group of method claims that include claims 11, 14 and 15 because claim 13 recites an additional unobvious operation (deformation to secure the previously recited alignment) that is not found in either the Rose or the Strobl reference. Therefore, even if claims 11, 12, 14 and 15 are found to be unpatentable over the combination of Strobl and Rose, claim 13 is thought to be patentable due to the recitation of deformation of the projection, since there is nothing to suggest such deformation in either the Strobl or Rose reference. Note that the "projection" 42 of the Rose patent is not deformed to secure an axial alignment that was achieved after the fixing surfaces were in contact, as claimed.

The patents to Strobl and Rose, taken as a whole, do not suggest the claimed subject matter

Since neither of the references taken alone discloses or suggests the claim limitations, as discussed in detail above, a combination of the references cannot show the claim limitations.

The claim limitations that are not disclosed in the prior art render the claims unobvious

The limitations that are not disclosed in the prior art render the claims unobvious. The feature of permitting radial movement of the fixing surfaces allows the axial alignment of the bearing to be adjusted before the first and second members are fixed together. This reduces the

cost of manufacture significantly. The axial alignment of the Strobl device is determined by the dimensions of the retainer 9. That is, once the retainer 9 is fitted in the housing 6, no radial movement of the retainer 9 is possible. Likewise, the dimensions of the bearing bracket 14 of the Rose patent and the position of the apertures 48 determine the axial alignment of the bearing assembly. Thus, the dimensions of the retainer 9 and the bearing bracket 14 of the prior art references are very important, which adds to their cost and to the difficulty of manufacturing. However, in the Strobl device, the dimensions of the holding plate 6 are not nearly so important, since the axial alignment is not determined by the dimensions of the holding plate 6. In the present invention, adjustment of the axial alignment is performed after the holding plate is positioned on the end frame 5.

In the Strobl device, if there are defects in the retainer, the retainer might apply uneven force to the bearing. This is also true of the Rose device. However, in the present invention, there is an adjustment performed before the holding members are fixed. This reduces the number of faulty assemblies.

Therefore, the claimed features, which are not disclosed in the prior art, reduce the cost of manufacturing parts and reduce the number of defective installations. The features missing from the prior art thus render the claims unobvious to one of ordinary skill in the art.

The Examiners Position

In the Advisory Action, the examiner argued the following:

> "Applicant has argued that the Reference of Rose does not allow for adjustment before the collar is fixed. The examiner disagrees. The snapping of the flexures that applicant refer (*sic*) to is what fixes the collar in place. Before that, the bushing is allowed to move. Furthermore, the reference discloses that the bracket may flex (See column 2 lines 48-58) which would allow for adjustment."

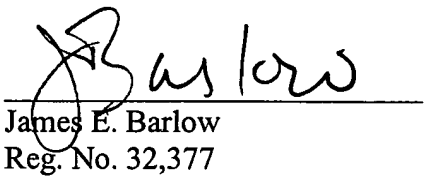
It is true that the bearing bracket 14 of the Rose patent can be moved before the fingers 42 are locked in place. However, the claims recite that the fixing surfaces can move radially and relatively when the fixing surfaces come into contact with one another. The lower surface of the feet 32 and the upper surface of the bearing plate 16 correspond to the claimed fixing surfaces. When the lower surface of the feet 32 of the Rose device comes into contact with the upper surface of the bearing plate 16, the fingers 42 are fully locked into engagement with the bearing plate 16, and further radial and relative movement of the fixing surfaces is not permitted. Even if further movement does occur, it is not for the purpose of adjusting the axial alignment, as claimed. Therefore, the applicants respectfully disagree with the examiner.

As stated above, if it is the examiner's position that, in the combination of Strobl and Rose, the feet 32 do move radially after the fixing surfaces contact one another due to the thin flexible nature of the fingers 42, then it is the applicants' position that it would be improper to combine the Rose patent with the Strobl patent. That is, the retainer 9 of the Strobl patent is clearly not supposed to move once it is press fitted into position, and to substitute a flimsy, movable retainer would not serve the retaining purpose of the retainer 9 and would not have been obvious to one of ordinary skill in the art.

3. Conclusion

For the reasons given, claims 2-5, 7, 8, and 11-15 are patentable over the patent to Strobl in view of the patent to Rose. Therefore, the applicants request that the rejection be reversed and the application be allowed.

Respectfully submitted,



James E. Barlow
Reg. No. 32,377

Posz & Bethards, PLC
11250 Roger Bacon Drive, Suite 10
Reston, VA 20190
Phone 703-707-9110
Customer No. 23400

9) APPENDIX

The text of the claims on appeal is as follows:

2. A bearing holding structure comprising;

a bearing whose outer circumferential surface is formed in a spherical shape, and

first and second members having holding surfaces which extend axially in opposite directions to each other and between which the bearing is sandwiched, each of the holding surfaces being tapered axially to expand straight toward the opposing holding surface, wherein the first and second members have fixing surfaces which extend radially from the holding surfaces, respectively, and allow radial and relative movement for adjusting an axial alignment among the first and second members and the bearing, when the fixing surfaces come in contact with each other in advance for sandwiching the bearing between the holding surfaces, and wherein the fixing surfaces are fixed to each other to inhibit the radial and relative movement so that first and second members rigidly hold the bearing.

3. A bearing holding structure according to claim 2, wherein one of the fixing surfaces is provided with at least a projection and another of the fixing surfaces is provided with at least an aperture, the projection being engaged with the aperture so as to be able to slightly move therein, when the fixing surfaces come in contact with each other in advance, and, then, being deformed partly after having secured the axial alignment so that the fixing surfaces are fixed to each other.

4. A bearing holding structure according to claim 2, wherein at least one of the holding surfaces is provided with biasing means for urging the bearing against the opposing holding surface.

5. A bearing holding structure according to claim 4, wherein the biasing means is a plurality of elastically deformable pieces formed circumferentially by cutting radially at given angular intervals and raising in one direction a part of the first and second members corresponding to the one of the holding surfaces.

7. A motor comprising:

a cylinder-shaped yoke having an opening at an axial end thereof;

a plurality of magnets fixed to an inner circumference of the yoke;

a rotor disposed in a space of the yoke on an inner side of the magnets;

an end plate fixed to the opening, the end plate having an axially outwardly extending holding surface;

a bearing disposed in a center of the end plate for rotatably holding the rotor, wherein an outer circumferential surface of the bearing is spherical; and

a holding plate having axially inwardly extending holding surface, wherein the holding surfaces of the end plate and the holding plate are opposed to each other so that the bearing is sandwiched between the end plate and the holding plate, and each of the holding surfaces is tapered axially to expand straight toward the opposing holding surface, wherein the end and holding plates have fixing surfaces which extend radially from the holding surfaces, respectively, and allow a radial and relative movement to adjust an axial alignment among the end and holding plates and the bearing, when the fixing surfaces come in contact with each other in advance for sandwiching the bearing between the holding surfaces and, then, are fixed to each other to inhibit the radial and relative movement so that the end and holding plates hold the bearing.

8. A motor according to claim 7, wherein one of the fixing surfaces is provided with at least a projection and another of the fixing surfaces is provided with at least an aperture, the projection being engaged with the aperture so as to be able to slightly move therein, when the fixing surfaces come in contact with each other in advance, and, then, is partly deformed after having secured the axial alignment so that the fixing surfaces are fixed to each other.

11. A method of holding a bearing that is self aligning, the method comprising:

providing a first member and a second member having holding surfaces, which extend axially in opposite directions to each other, each of the holding surfaces being tapered axially to expand straight toward the opposing holding surface; and

sandwiching the bearing between the holding surfaces of the first member and the second member, wherein the first member and second member further have fixing surfaces which extend radially from the holding surfaces, the method further including;

moving the first member and the second member toward each other until the fixing surfaces come in contact with each other, thereby performing the sandwiching, and

allowing a radial and relative movement of the first member and the second member for adjusting axial alignment of the first member and the second member and the bearing, the method further including, when the fixing surfaces come in contact with each other and after the allowing a radial and relative movement of the first member and the second member, fixing the first member and the second member to each other to inhibit the radial and relative movement so that first and second members rigidly hold the bearing in alignment.

12. The method of holding a bearing of claim 11 further including providing one of the fixing surfaces with at least a projection and another of the fixing surfaces with at least an aperture, the projection being engaged with the aperture so as to be able to move therein when the fixing surfaces come in contact with each other, thereby providing for the adjusting the axial alignment among the first member and the second member and the bearing.

13. The method of holding a bearing of claim 12 further including deforming the projection to secure the fixing surfaces to each other thus securing the axial alignment among the first member and the second member and the bearing.

14. The method of holding a bearing of claim 11 further including providing at least one of the holding surfaces with biasing means for urging the bearing against the opposing holding surface.

15. The method of holding a bearing of claim 14, wherein the providing at least one of the holding surfaces with biasing means further includes providing the biasing means as a plurality of elastically deformable pieces formed circumferentially by cutting radially at given angular intervals and raising in one direction a part of the first and second members corresponding to the one of the holding surfaces.